


FEMCard analysis result

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Project data	
Projectname	Hill_large_strain
Folder	F:\X_tmp_del\Demo_Projects\B_transversely_isotropic\A_quasi_static\large_strain
Created at	05.12.2015
Maker	Parsolve GmbH
Comment	synthetic measurement data
Material model	TRANSV_ISOTR LARGE strain transv. isotr. HILL (Rij) PLASTICITY (nonl. isotr. hardg.), rotat. sym

Test informations


Test 1

Color	
Number	1
Name	Tens_la_s_xx_e_xx_e_yy
Folder	F:\Demo_Projects\B_transversely_isotropic\A_quasi_static\large_strain\meas_data\Tens_la_s_xx_e_xx_e_y
Load type	Anisotropic static LARGE strain UNIAXIAL true X stress vs. logarithmic X and Y strains
Weight T	1.08078

Test 2

Color	
Number	2
Name	Tens_la_s_yy_e_yy_e_zz
Folder	F:\Demo_Projects\B_transversely_isotropic\A_quasi_static\large_strain\meas_data\Tens_la_s_yy_e_yy_e_z
Load type	Anisotropic static LARGE strain UNIAXIAL true Y stress vs. logarithmic Y and Z strains
Weight T	1.05112

Test 3

Color	
Number	3
Name	Shear_s_xy_g_xy
Folder	F:\Demo_Projects\B_transversely_isotropic\A_quasi_static\large_strain\meas_data\Shear_s_xy_g_xy.txt
Load type	Anisotropic static LARGE strain SIMPLE SHEAR X_Y engineering shear stress vs. X_Y engi
Weight T	1

Tests weight TR

Test 1		
Start	End	Value
0	14	1.16e+03
15	29	354

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30	45	13.7
46	60	4
61	75	1.99
76	90	1

Test 2		
Start	End	Value
0	14	1.44e+03
15	29	440
30	45	12.9
46	60	3.8
61	75	1.9
76	90	1

Test 3		
Start	End	Value
0	24	1.16e+03
25	49	365
50	75	9.09
76	100	2.87
101	125	1.57
126	150	1

Tests weight SD

Test 1	
Strain direction	Value
le_exp^xx	1
le_exp^yy	2.01

Test 2	
Strain direction	Value
le_exp^zz	1.54
le_exp^yy	1

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Model parameter					
Parameter	Fix	Lower limit	Upper limit	Start value	Result
E	x	1000	300000	150000	150000
PR	x	0.1	0.4	0.33	0.33
R_xx	x	1	1	1	1
R_yy		0.2	2	1	0.8301316
R_xy		0.2	2	1	0.6998973
Y_0		20	200	100	119.7545
Y_inf		30	600	150	347.4468
Omega		5	800	40	11.14153
H		10	10000	200	67.34324

Processing parameter	
Max. number of steps	200
LM start value	1
Max. error sum of squares	1e-05

Processing results	
Steps	12
Least squares sum	5.4032e-06

Correlation matrix									
	E	PR	R_xx	R_yy	R_xy	Y_0	Y_inf	Omega	H
E	1	0	0	0	0	0	0	0	0
PR	0	1	0	0	0	0	0	0	0
R_xx	0	0	1	0	0	0	0	0	0
R_yy	0	0	0	1	0.366	0.0431	0.0207	-0.354	0.00892
R_xy	0	0	0	0.366	1	-0.235	0.105	-0.305	0.2
Y_0	0	0	0	0.0431	-0.235	1	0.534	-0.656	-0.269
Y_inf	0	0	0	0.0207	0.105	0.534	1	-0.791	-0.448
Omega	0	0	0	-0.354	-0.305	-0.656	-0.791	1	0.0867
H	0	0	0	0.00892	0.2	-0.269	-0.448	0.0867	1

stress vs. plastic strain [-] for identified parameter set (geometrically nonlinear theory)	
true yield stress	equivalent logarithmic plastic strain [-]
119.7545	0
129.1991	0.0037

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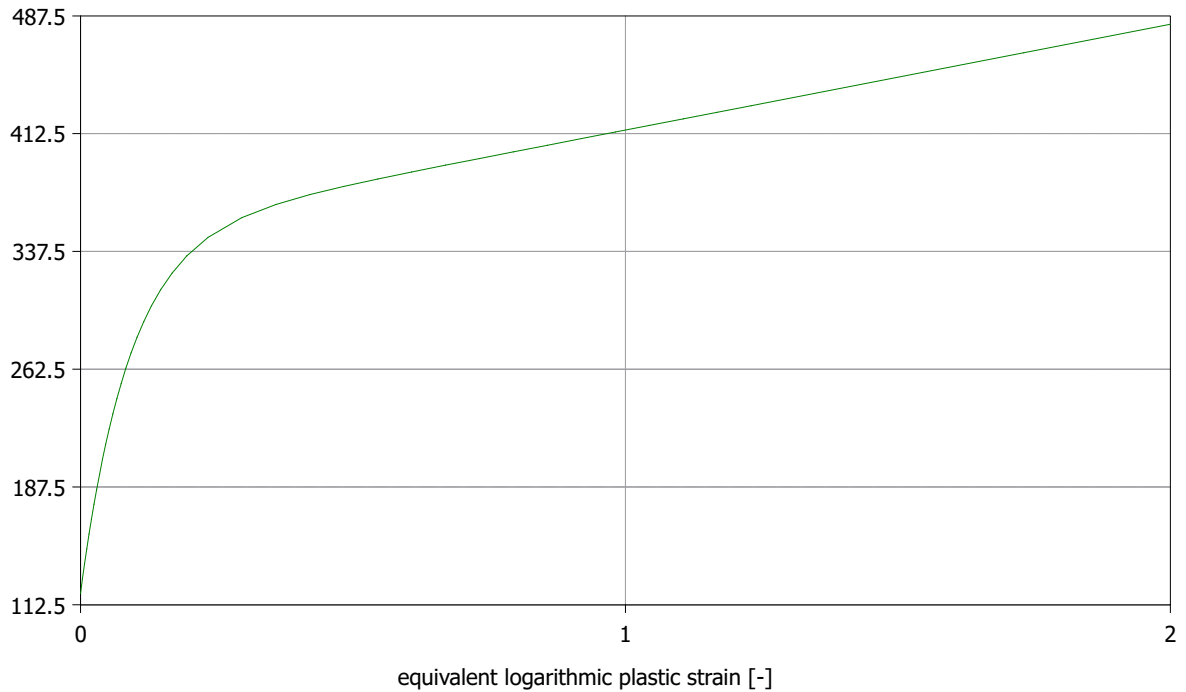
138.7526	0.0076
148.1408	0.0116
157.5709	0.0158
167.0019	0.0202
176.5937	0.0249
186.0902	0.0298
195.636	0.035
205.17	0.0405
214.7926	0.0464
224.4206	0.0527
234.114	0.0595
243.7714	0.0668
253.4177	0.0747
263.1549	0.0834
272.9214	0.093
282.8078	0.1038
292.8093	0.1161
302.9048	0.1303
313.1935	0.1472
323.7301	0.168
334.6845	0.1951
346.4136	0.234
359.013	0.2963
367.4064	0.3586
373.6988	0.4209
378.9417	0.4832
383.6604	0.5455
388.1172	0.6078
392.4433	0.6701
396.7039	0.7324
400.932	0.7947
405.1438	0.857
409.3474	0.9193
413.5469	0.9816
417.7444	1.0439
421.9409	1.1062
426.1369	1.1685
430.3327	1.2308

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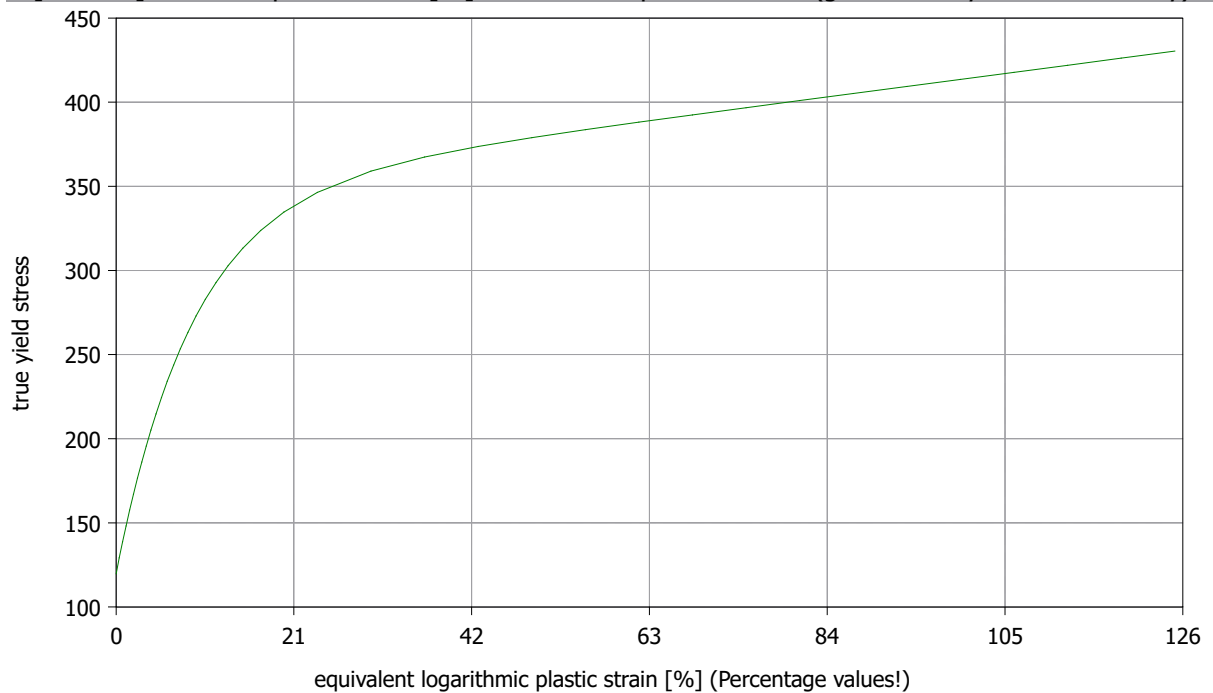
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464.0113	1.7309
482.1266	1.9999

stress vs. plastic strain [-] for identified parameter set (geometrically nonlinear theory)



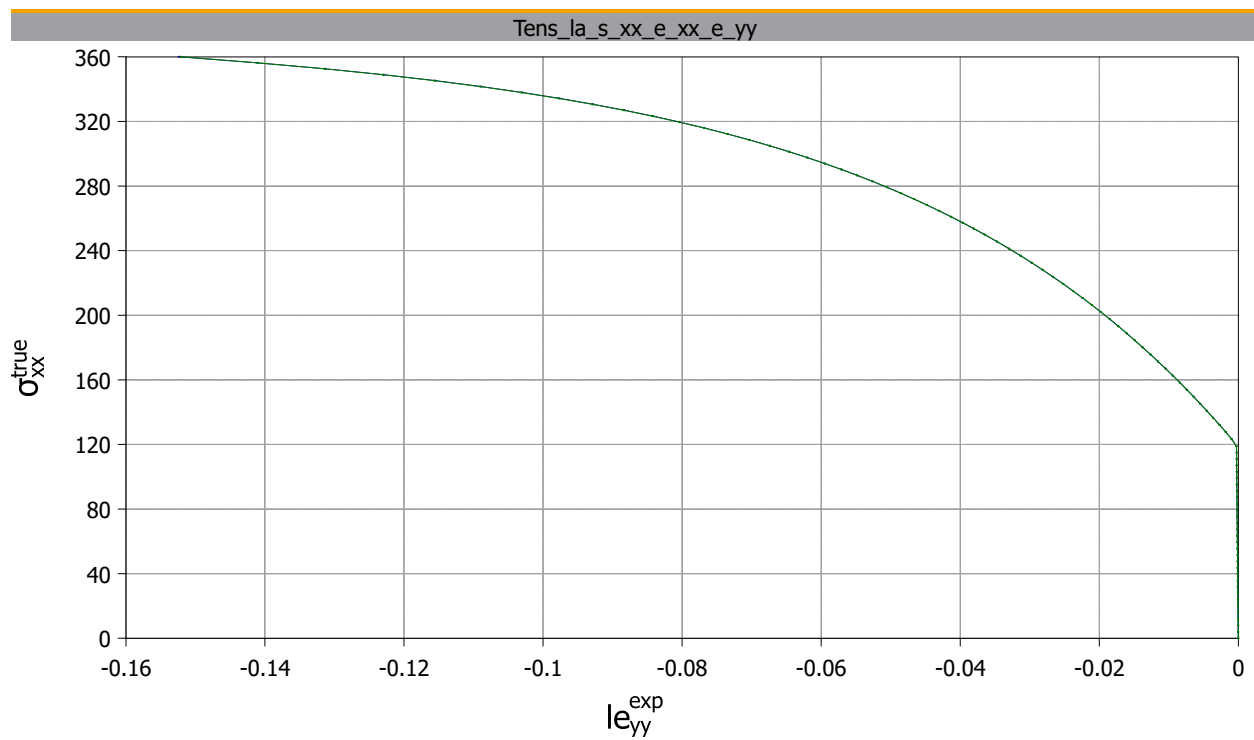
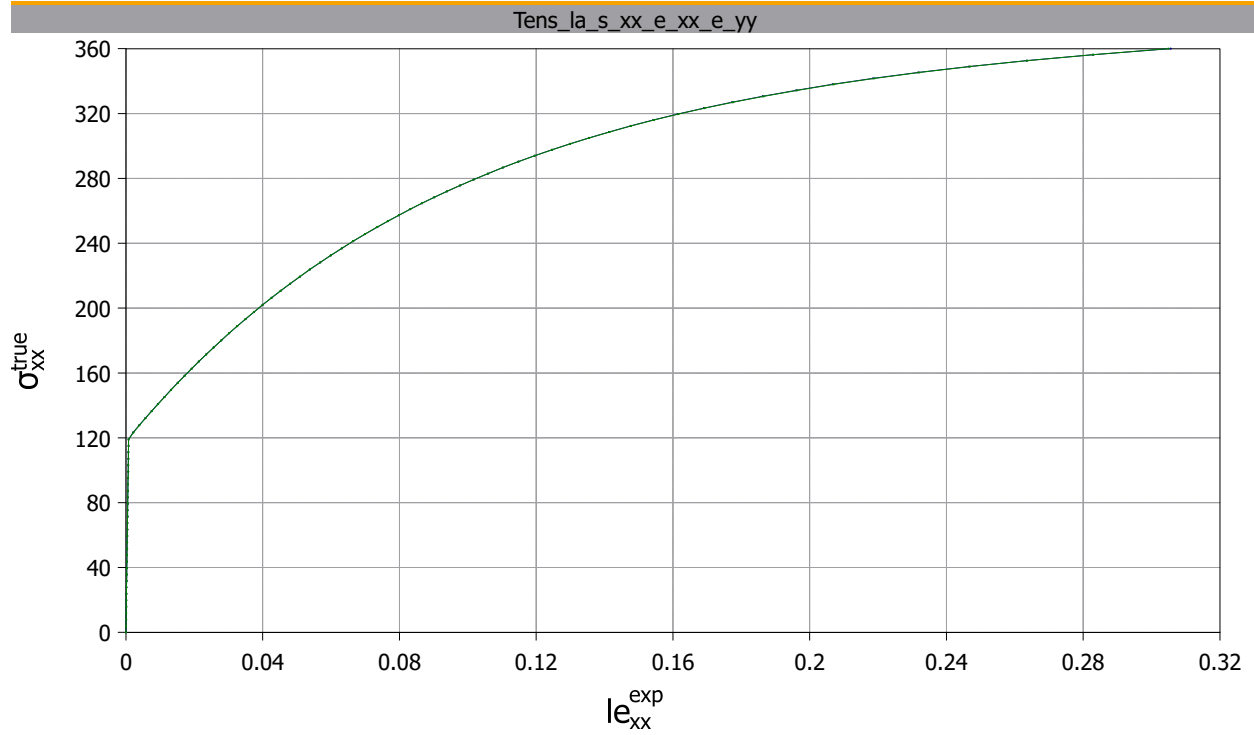
[zoomed] stress vs. plastic strain [%] for identified parameter set (geometrically nonlinear theory)



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Verification



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